Mechanical Engineering Technician Series

California State Personnel Board Specification

Series established January 20, 1993

Scope

This series specification describes three classes which perform mechanical drafting, design, construction and maintenance work in State service.

Schem Code	Class Code	Class
HI50	3595	Mechanical Engineering Technician I
HI40	3594	Mechanical Engineering Technician II
HI30	3593	Mechanical Engineering Technician III

Mechanical Engineering Technician Series Specification - Class Titles and Codes

Definition of Series

This series is available for use throughout State service. Incumbents in these classes do mechanical drafting, design and layout involved in the preparation of design and contract drawings; preparation of cost estimates; checking of drawings and construction submissions; field inspections; and other related work.

Factors Affecting Position Allocation

Level, variety and complexity of assignments; degree of independent action, skill and decision; degree of direction received; and, in the higher classes, level of lead person and design checking/inspection responsibility.

Definition of Levels

Mechanical Engineering Technician I

This is the entry and first working level of the series. Under the supervision of an engineer, incumbents prepare complete design and contract drawings and check shop drawings and construction submittals; design simple mechanical systems to previously established standards; prepare basic plans, specifications and quantity and cost estimates on a wide variety of mechanical work such as air conditioning, ventilation and heating systems for buildings and tunnels, bridge mechanical devices, piping and duct work, highway maintenance equipment and equipment components and mechanical systems for power plants, pumping plants and generator, fan and pump installations; prepare mechanical system layouts and mechanical detail drawings of average difficulty; use state-of-the-art technology, i.e., Computer-Aided Drafting/Design (CADD), personal computers, stand-alone interactive systems and automated lettering devices; incorporate mechanical details into general plans&#65533;and occasionally will work on drawings and designs other than mechanical; inspect simple manufacturing and installations of mechanical materials and highway maintenance equipment and equipment components; make simple engineering calculations; report the status of basic mechanical engineering work and completed results.

Mechanical Engineering Technician II

This is the full journey level in the series. Under the direction of an engineer, incumbents assist in and sometimes conduct field investigations; prepare complete design and contract drawings and check shop drawings and construction submittals; design difficult mechanical systems to previously established standards,

with engineering help only for unusual features that have not been standardized; secure information from catalogs; prepare difficult plans, specifications and quantity and cost estimates on a wide variety of mechanical work such as air conditioning, ventilation and heating systems for buildings and tunnels, bridge mechanical devices, piping and duct work, highway maintenance equipment and equipment components and mechanical systems for power plants, pumping plants and generator, fan and pump installations; prepare difficult mechanical system layouts and detail drawings; use state-of-the-art technology, i.e., CADD, personal computers, stand-alone interactive systems and automated lettering devices; incorporate mechanical details into general plans and occasionally will work on drawings and designs other than mechanical; inspect routine manufacturing and installations of mechanical materials and highway maintenance equipment and equipment components, especially where conformance to standard design requirements are involved; make routine engineering calculations; report the status of general mechanical engineering work and completed results.

Mechanical Engineering Technician III

This is the advanced journey level in the series. Under the general direction of an engineer, incumbents independently conduct field investigations; plot preliminary site data; prepare and check complete design and contract drawings and check shop drawings and construction submittals; design complex mechanical systems to previously established standards and good design practice, with engineering help only for the most novel, unstandardized features; secure information from catalogs; prepare the most difficult plans, specifications and quantity and cost estimates on a wide variety of mechanical work such as air conditioning, ventilation and heating systems for buildings and tunnels, bridge mechanical devices, piping and duct work, highway maintenance equipment and equipment components and mechanical systems for power plants, pumping plants and generator, fan and pump installations; prepare complex mechanical layouts and complex detail drawings; use state-of-the-art technology, i.e., CADD, personal computers, stand-alone interactive systems and automated lettering devices; coordinate design with other groups and incorporate mechanical details into general plans, and occasionally work on drawings and designs other than mechanical; inspect complex manufacturing and installations of mechanical materials and highway maintenance equipment and equipment components, especially where conformance to special design or complex requirements are involved; suggest design standards and prepare any special mechanical drafting standards; make complex engineering calculations; act in a lead person capacity; train drafting persons and technicians; report the status of complex and unusual mechanical engineering work and completed results.

Minimum Qualifications

Mechanical Engineering Technician I

Education: Completion of a two-year terminal curriculum in mechanical technology at a community college, or completion of the sophomore year (at least 60 semester units or equivalent quarter units) of a professional mechanical engineering college or university curriculum. [Candidates may substitute mechanical drafting experience for the education on the basis that one year of experience is equivalent to one year (at least 30 semester units or equivalent quarter units) of education.] and Either I Experience: Two years of experience as a Drafting Services Aid, Range B, in the California state service.

OR II

Experience: Three years of drafting experience in an engineering office (one year of which may be specification writing only), two years of which must have been mechanical drafting and design experience equivalent in level of responsibility to a Drafting Services Aid, Range B, in the California state service.

Mechanical Engineering Technician II

EITHER I

Experience: Two years of experience as a Mechanical Engineering Technician I in the California state service.

OR II

Experience: Five years of drafting and design experience in an engineering office (one year of which may be specification writing only), two years of which must have been mechanical drafting and design experience equivalent in level of responsibility to a Mechanical Engineering Technician I in the California state service. and

Education: Completion of a two-year terminal curriculum in mechanical technology at a community college, or completion of the sophomore year (at least 60 semester units or equivalent quarter units) of a professional mechanical engineering college or university curriculum. [Candidates may substitute mechanical drafting experience for the education on the basis that one year of experience is equivalent to one year (at least 30 semester units or equivalent quarter units) of education.]

Mechanical Engineering Technician III

EITHER I

Experience: Two years of experience as a Mechanical Engineering Technician II in the California state service.

OR II

Experience: Broad and extensive (more than five years) of drafting and design experience in an engineering office (two years of which may be specification writing only), three years of which must have been mechanical drafting and design experience equivalent in level of responsibility to a Mechanical Engineering Technician II in the California state service. and

Education: Equivalent to completion of a two-year terminal curriculum in mechanical technology at a community college, or completion of the sophomore year (at least 60 semester units or equivalent quarter units) of a professional mechanical engineering college or university curriculum. [Candidates may substitute mechanical drafting experience for the education on the basis that one year of experience is equivalent to one year (at least 30 semester units or equivalent quarter units) of education.]

Knowledge and Abilities

All Levels:

Knowledge of: Design of mechanical systems, components and materials; installation and construction methods; drafting symbols, devices and mechanisms; state-of-the-art technology, i.e., CADD, personal computers, stand-alone interactive systems and various technical aids; air conditioning, ventilation and heating systems, piping and duct work and fan, turbine, pump, highway maintenance equipment and equipment components and installations; mechanical theory, and practice; engineering mathematics; the department's safety and health policies and procedures; basic safety practices contained in the California Code of Regulations, Title 8 Industrial Relations, Safety Orders, and the General Industry Safety Orders regarding personal protective equipment.

Ability to: Follow directions; prepare design and contract drawings for mechanical work from existing drawings and from design notes and sketches; interpret all drawings, plans and specifications of any kind encountered in the work and incorporate mechanical and associated drawings, plans and specifications into general design and contract documents; prepare as-built plans; use state-of-the-art technology, i.e., CADD, personal computers, stand-alone interactive systems and automated lettering devices; prepare neat and accurate drafting and freehand and machine lettering; report the status of work and the completed results.

Mechanical Engineering Technician I

Knowledge of: All of the above.

Ability to: All of the above, and prepare basic, or assist in preparation of complex plans, specifications and quantity and cost estimates of mechanical work; do mechanical design and layout work of average difficulty and detail drafting of the most complex nature.

Mechanical Engineering Technician II

Knowledge of: All of the above.

Ability to: All of the above, and work independently; prepare engineering calculations; check and plot from field notes and prepare and check complex plans, quantity and cost estimates and specifications of mechanical work; do complex layout work; specify and estimate mechanical systems and components; do shop and field inspection of equipment and mechanical systems; correlate plans, designs, drawings and data with physical conditions.

Mechanical Engineering Technician III

Knowledge of: All of the above, and lead person responsibilities; training methods; methods of directing and scheduling the work of others.

Ability to: All of the above, and do difficult mechanical design, the most difficult layout work and mechanical detail drafting of the most complex nature; check as-built plans; act in a lead capacity; train drafting persons and technicians.

Class History

Class	Date Established	Date Revised	Title Changed
Mechanical Engineering Technician I	02/06/1964	01/20/1993	--
Mechanical Engineering Technician II	02/06/1964	01/20/1993	--
Mechanical Engineering Technician III	02/06/1964	01/20/1993	--

Mechanical Engineering Technician Series History - Dates Established, Revised, and Title Changed

Updated 6/3/2012